

CLAIMS

1. A head for the linear dimension checking of mechanical pieces, including
- 5 a casing (1),
a movable arm (7) with a first portion (8) partly located inside the casing (1) and a second portion (9) entirely located at the exterior of the casing (1),
a position transducer (11) inside the casing (1) and
10 associated with said first portion (8),
a feeler (19) coupled with said second portion (9) for contacting the piece to be checked,
a zero-setting mechanism (40) for adapting the head, by adjusting the mutual arrangement between the first portion
15 (8) and the second portion (9) of the movable arm (7), to check pieces with different nominal dimensions, the zero-setting mechanism (40) including a movable mechanical reference (27) between the movable arm (7) and the casing
20 (1), arranged substantially at the exterior of the casing (1), the movable mechanical reference (27) being adapted to take two positions, to hold said first portion (8) of the movable arm (7) in a preset position with respect to the casing (1) and to release the first portion (8), respectively,
25 characterized in that the zero-setting mechanism (40) includes a quick locking/unlocking device (20) between said first portion (8) and said second portion (9) of the movable arm (7).
- 30 2. The head according to claim 1, wherein the zero-setting mechanism (40) includes a first abutment and reference surface (43), integral with the casing (1), said movable mechanical reference (27) including a second abutment and reference surface (44), integral with the
35 movable arm (7), said first abutment and reference surface (43) and said second abutment and reference surface (44) being adapted to mutually cooperate for defining said

preset position.

3. The head according to claim 2, wherein the quick locking/unlocking device (20) defines said second abutment and reference surface (44).

4. The head according to claim 3, wherein said quick locking/unlocking device (20) is adapted to take an unlocking position, at which said first abutment and reference surface (43) and said second abutment and reference surface (44) are in contact with each other for defining said preset position, and a locking position at which said first abutment and reference surface (43) and said second abutment and reference surface (44) are separate from each other.

5. The head according to claim 4, wherein the quick locking/unlocking device (20) includes locking surfaces (32,31) integral with said first portion (8) and said second portion (9) of the movable arm (7), and thrust elements (24) adapted to urge said locking surfaces (32,31) one against the other for locking said first portion (8) and said second portion (9) of the movable arm (7) with respect to each other in said locking position of the quick locking/unlocking device (20).

6. The head according to claim 5, wherein the quick locking/unlocking device (20) includes a resilient compression element (35) adapted to keep said locking surfaces (32,31) resting on each other in said unlocking position of the quick locking/unlocking device (20).

7. The head according to claim 5 or claim 6, wherein said thrust elements include a thrust pin (24) adapted to urge said locking surfaces (32,31) one against the other along a locking axis.

- 16 -

8. The head according to one of the claims from 5 to 7, wherein the quick locking/unlocking device (20) includes a transmission element (27), coupled with said thrust elements (24) and manually-operated, the transmission
5 element (27) and the thrust elements (24) being coupled with said first portion (8) of the movable arm (7).

9. The head according to claim 8 as dependent on claim 7, wherein said transmission element (27) is substantially
10 disk-shaped, is coupled with the thrust pin (24) and is adapted to perform rotation displacements about the locking axis, the transmission element (27) defining said movable mechanical reference and including a curved lateral surface (30) that defines said second abutment and reference
15 surface (44).

10. The head according to claim 9, wherein said second abutment and reference surface (44) is defined by an area with larger radial dimensions of said curved lateral
20 surface (30).

11. The head according to claim 9 or claim 10, including a drive lever (29) radially coupled with the transmission element (27) for enabling an operator to manually drive the
25 transmission element (27) to perform said rotation displacements about the locking axis for changing from said locking position to said unlocking position of the quick locking/unlocking device (20), and vice versa.

30 12. The head according to one of the claims from 2 to 11, wherein the casing (1) includes a closure plate (3) with an opening (14) adapted to allow the passage and measurement displacements of the movable arm (7), and a protruding element (41), integral with the closure plate (3), that
35 carries said first abutment and reference surface (43).

13. The head according to claim 12, wherein a reference

- 17 -

dowel (42) is coupled in an adjustable way to said protruding element (41) and defines said first abutment and reference surface (43).

- 5 14. The head according to one of the preceding claims,
wherein each of said first portion (8) and said second
portion (9) of the movable arm (7) includes an end part
(8t,9t) and a central part (8c,9c) of the movable arm (7),
rigidly coupled with each other, the quick
10 locking/unlocking device (20) being arranged between said
central parts (8c,9c), the movable mechanical reference
(27) being coupled with the central part (8c) in the first
portion (8) of the movable arm (7).